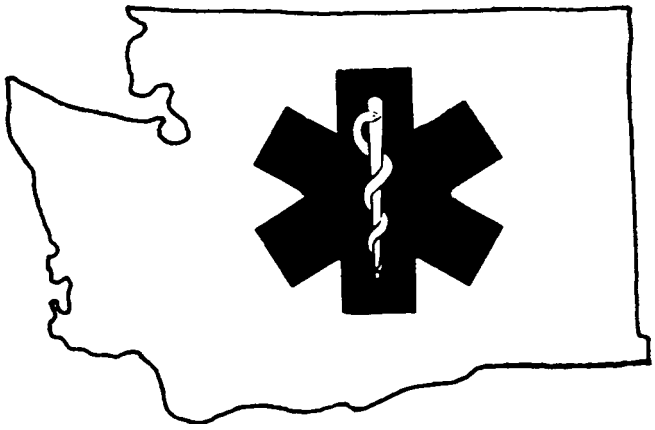
WASHINGTON STATE

DEPARTMENT OF HEALTH

HEALTH SERVICES QUALITY ASSURANCE DIVISION

OFFICE OF EMERGENCY MEDICAL SERVICES & TRAUMA SYSTEM



MASS CASUALTY - ALL HAZARDS

FIELD PROTOCOLS

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These Weapons of Mass Destruction (WMD) Field Protocols are State Protocols that establish the standard for field performance. EMS County Medical Program Directors may NOT have protocols that vary from these without specific written approval from the Department of Health. Any deviation from these protocols must be identified to and approved in writing by the Department of Health.

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INTRODUCTION

These protocols were developed by the Washington State Department of Health, Office of Emergency Medical Services and Trauma System with input and review from the Protocol Work Group. These protocols were developed based on the nation wide research of data and references available for each protocol. The protocols represent the consolidation of medical procedures for emergency pre-hospital patient care for WMD events from local and national sources.

These protocols were developed for use by Washington State certified EMS personnel. No person may provide any treatment they are not trained AND certified to provide by the Department of Health at the required level of certification.

The General Orders are intended to be considered with all protocols contained within.

These protocols are intended to:

1. Provide direction for the use of appropriate emergency medical care procedures in an all hazards environment, to be employed by Washington State certified EMS personnel while working under the direction of the County Medical Program Director;
2. Provide for the standardization of pre-hospital care in Washington State;
3. Provide base hospital physicians and nurses with an understanding of what aspects of patient care have been stressed to EMS personnel and what their treatment capabilities may be;
4. Provide EMS personnel with a framework for pre-hospital care and an anticipation of supportive orders from Medical Control;
5. Provide the basic framework on which Medical Control can conduct quality improvement programs.

They are <u>not</u> intended to:

1. Allow procedures to be performed by EMS personnel who are not qualified and certified to do so.
2. Be a replacement for “on-line” medical control;
3. Be a teaching manual for EMS personnel. It is understood that EMS personnel are appropriately trained and that each person will continue to meet the state’s continuing education requirements for recertification. It is further understood that the County Medical Program Director will provide continuing education based on the results of patient care audit and review;
4. Interfere with the wishes of the patient or family.

They assume:

1. The event is a mass casualty situation
2. The hazard has been identified and personnel are utilizing the appropriate PPE.
3. Scope of practice is not violated, meaning an EMS responder does not function beyond their level of training and certification.

Updates in these protocols will include protocols for the following events:

- Biological
- Radiological
- Nuclear
- Explosives

WMD-ALL HAZARDS GENERAL ORDERS

I. Scene Size-up

A. Scene Safety

1. Approach scene from uphill, upwind, upstream
2. Consider the possibility of water reactive chemicals
3. Consider hazard or spread of contamination from service animals.

B. R.A.I.N.

1. **Recognize -** indications of possible Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) use
   a. Unusual vapor cloud, liquid, spray, odor
   b. Lack of insects; sick or dying animals, fish or birds
   c. Unusual metal debris or spray devices
   d. Multiple patients with similar symptoms
   e. Attempt to determine agent identity
2. **Avoid** – the hazard/contamination/injury
   a. Prepare personal protection equipment, decontamination supplies, antidotes, etc.
   b. Additional exposure to patients or responders
   c. Unsafe structures, secondary devices anything that appears unsure or unsafe
   d. Expansion of contamination site through movement of people and equipment
3. **Isolate** – Isolate or remove exposure to hazardous agents/threats
   a. Eliminate exposure to contamination or threat.
   b. Remove yourself from contamination zone
   c. Keep people from entering contamination zone
   d. If possible, remove contaminated patients to the warm zone.
4. **Notify** - Notify medical control (notifies burn centers) and the Incident Commander (IC)
   a. Dispatch and incoming units of scene size-up.
   b. Agency responsible for HAZMAT.
   c. Base station hospital of approximate number of patients, Nature of Illness (**NOI**)/Mechanism of Injury (**MOI**).

C. Incident Management

1. Establish incident command
2. Establish staging area
3. Request additional resources
   a. HAZMAT Team (MCI)
   b. Transport vehicles
4. Establish safe routes of ingress and egress

D. Scene Assessment

1. NOI (Chemical, Biological, Radiological)
   a. Refer to the specific patient care protocol
2. MOI (Chemical, Radiological, Nuclear, and Explosive)
   a. Refer to the specific trauma protocol
3. Begin triage per mass casualty incident plan

E. **Identify priority patients** – Begin Simple Triage And Rapid Treatment (START) Triage (see page 32)

II. Management

A. Provide emergency decontamination per specific protocols or see chart on page 23
B. Provide appropriate care according to specific treatment protocol.
C. Provide technical decontamination necessary for transport.
    1. Decontaminate patients exposed to mustard agents before transport and entry into medical treatment facilities to prevent vapor accumulation

III. Transportation

A. Provide protection from the environment.
B. Transport per MCI plans
C. Advise emergency department of changes in patient's condition during transport
D. Continue ongoing assessment and patient care

IV. Communications

A. Communicate patient information to the receiving hospital.
B. Reports/Documentation
    1. Provide appropriate report to medical staff
    2. Complete agency incident documentation

V. Clean, Decontaminate, Service And Restock Vehicle

CHEMICAL AGENTS

- Information for each material is found in the 2004 Emergency Reference Guidebook (ERG).
- Please contact your nearest HazMat Team or Fire Department if you suspect any of the materials are present:

Incapacitating (Riot Control) Agents

Tear Gas (CS, CA, and CR), Mace (CN), Pepper spray (OC),

- Riot control agents incapacitate individuals and are not intended to cause significant injury or fatality, but to render individuals incapable of effective concerted actions.
- Short duration irritants. Effects are immediate. Symptoms resolve themselves (10 to 30 min.)
- Characteristics: Odor: CN – apple blossom

I. Scene Size-up
A. Utilize appropriate PPE

II. Signs and Symptoms
A. Eyes - Intense irritation, pain, spasmodic twitching, tearing, sensitivity to light
B. Respiratory Tract – Runny nose, pain, tightness in chest, difficulty breathing, choking, burning
C. Skin -Stinging, occasional dermatitis, blistering may occur
D. Gastrointestinal tract - Nausea, vomiting rarely occurs
E. Other – Headache

III. Emergency Decontamination
A. Remove contaminated clothing and personal belongings
B. Irrigation of the eyes may help with pain relief.
C. Prevent contaminated irrigation solution from running onto unaffected tissues.

IV. Management
A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary
B. **ALS** – analgesic nose/eye drops per MPD

Choking (Lung Damaging) Agents

Choking agents cause destruction to the respiratory system. These agents are delivered as heavy gases that remain near ground level and in low lying areas. They dissipate rapidly in a breeze.

Chlorine (Cl)

- Chlorine is the most widely known chemical in this category and is easily available.
- Chlorine is usually stored as a liquid, but becomes a gas that expands when released.
- There is no contamination of objects when in gas form. Chlorine in the upper respiratory area results in the production of hydrochloric acid and chemical burns at the site.
- Characteristics: Color – greenish-yellow gas or amber liquid (under pressure

I. Scene Size-up

A. Chlorine is reactive to water, produces toxic gasses and may increase toxicity when mixed with water

B. Utilize appropriate PPE

II. Signs and Symptoms

A. Eyes – tearing, irritation

B. Respiratory tract: - nose and throat irritation, sneezing, dyspnea, violent cough, chest pain, decreased breath sounds, wheezing, stridor, loss of voice, runny nose, laryngeal or pulmonary edema, ulceration of the respiratory tract

C. Skin -Redness, and chemical burns to the skin, cyanosis, dermatitis

D. Central nervous system -General excitement or restlessness, lightheadedness, headache

E. Gastrointestinal tract -Nausea, vomiting, abdominal pain

F. Cardiovascular system -Rapid heart rate, increased rate of respiration

G. Other -Excessive salivation, muscle weakness, rales

III. Emergency Decontamination

A. Remove and double-bag contaminated clothing and personal belongings

B. Handle frostbitten skin and eyes with caution.

1. Warm affected parts
2. Let the circulation reestablish itself naturally.

C. Flush exposed skin and hair with plain water for 3 to 5 minutes

1. Wash twice with mild soap
2. Rinse thoroughly with water
3. Prevent contaminated irrigation solution from running onto unaffected skin.

D. Irrigation of the eyes may help with pain relief.

E. Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. Move patient to fresh air environment
2. ALS - Intubate the trachea if necessary
3. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated

B. ALS – analgesic nose/eye drops per MPD

Ammonia *(NH_3)*

- Used in the production of methamphetamine
- Synonyms include ammonia gas, anhydrous ammonia, liquid ammonia, aqueous ammonia, ammonia solution and ammonium hydroxide.
- Ammonia can cause illness through absorption, inhalation, or ingestion.
- The extent of illness depends on exposure, depth of inhalation, and concentration of exposure.
- Characteristics: colorless gas, which has a sharp, pungent, suffocating odor

I. Scene Size-up

A. Ammonia is reactive to water, produces toxic gasses and may increase toxicity when mixed with water

B. Utilize appropriate PPE

II. Signs and Symptoms

A. Eyes - Irritation, corneal scarring, potential blindness

B. Respiratory tract - nose, and throat irritation; coughing; bronchospasm, laryngospasm and laryngeal edema, pulmonary edema

C. Skin - Stinging pain, inflammation of skin, blisters, necrosis, especially moist areas

D. Gastrointestinal tract - burning, abdominal pain, difficulty swallowing, drooling, nausea, vomiting

E. Central nervous system - Altered mental status

III. Emergency Decontamination

A. Removal of the victim from the environment and decontaminate

1. If exposed patient has no skin or eye irritation, decontamination is usually not necessary
2. If exposure is significant, rapid skin decontamination is critical
   a) Remove and double-bag contaminated clothing and personal belongings while flushing exposed areas
      (1) Patient may assist with clothing removal and basic decontamination if able
   b) Flush liquid-exposed skin and hair with plain water for at least 5 minutes
   c) If possible, wash exposed skin extremely thoroughly with soap and water
   d) Flush exposed or irritated eyes with plain water or saline for 3 to 5 minutes
      (1) Remove contact lenses if present
   e) Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. **ALS** - Intubate the trachea if necessary
2. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated.

B. Pharmacology:

1. Bronchodilator per MPD
2. **ALS** – analgesics/narcotics per MPD

C. **EMT-I/ALS** - Provide IV therapy as necessary

D. In case of ingestion, do not induce vomiting:

1. Contact Poison Center.

Blister Agents:

Blister agents affect both exterior and interior parts of the body by causing tissue destruction and upon inhalation form blisters on lung tissue. The liquid blister agents slowly vaporize. More dense than air, blister agent vapors stay near the ground and dissipate slowly.

Chloropicrin

- Chloropicrin is a dermally active toxin. Do not approach the patient without adequate protective gear.
- Use hazardous materials teams in patient rescue and decontamination.
- Characteristics: Colorless-to-light green oily liquid with an intense and penetrating odor

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs and Symptoms

A. Eyes - irritation, pain, redness, and tearing; prolonged eye exposure to chloropicrin can cause blindness.
B. Respiratory tract - irritation, coughing, labored breathing, sore throat, dizziness, bluish skin, vomiting, and in some instances, chemical pneumonitis and pulmonary edema.
C. Skin - chemical burns or dermatitis manifested by red, cracked, and irritated skin.
   1. The extent of skin injury depends on the concentration and duration of exposure
D. Gastrointestinal tract - burns to the mouth, throat, and esophagus.
   1. Ingestion of large quantities of chloropicrin liquid can be fatal.
E. Injection: Redness and irritation of surrounding tissues.

III. Emergency Decontamination

A. During decontamination, it is important to avoid cross-contamination
B. Remove and double-bag contaminated clothing and personal belongings
C. Clean and scrub the patient's entire skin surface with soap and water
D. Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary; **DO NOT** use mouth-to-mouth.
   1. Intubate the trachea if necessary.
   2. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated.
B. Provide supportive measures addressing cardiovascular status as necessary.
C. If the patient complains of eye pain or tearing, irrigate the eyes with copious amounts of water.
D. **EMT-I/ALS** - Provide IV therapy as necessary
E. **ALS** – bronchodilator, analgesics/narcotics per MPD
F. No specific antidote exists for this toxin. General supportive measures are indicated.

Impure Sulfur Mustard (H), Distilled Sulfur Mustard (HD), and Nitrogen Mustard (HN-1, HN-2, HN-3)

- Mustard causes injury mainly through skin contact because it vaporizes slowly.
- After exposure, there may be a latent period from 2 hours to 1 day before blisters appear on the skin.
- If Sulfur Mustard (HD) is inhaled the symptoms begin in 4 to 6 hours, if absorbed by the skin, symptoms will begin within 2 to 48 hours.
- Nitrogen mustard has a slight odor, and appears colorless when pure, but can turn yellowish upon storage.
- Characteristics:
  - H and HD – colorless and almost odorless (may be odor of mustard, garlic, or rotten onions)
  - HN1-HN3 – Dark, oily liquid

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs and Symptoms

A. Eyes -Irritation, redness, edema of lids, tearing, sensitivity to light, spasmodic twitching, pain, corneal ulceration, possible scarring

B. Respiratory tract - Irritation, cough, hoarseness, sinus and pharynx burning, nosebleed, dyspnea, rales, pulmonary edema, fever, and pneumonia in severe cases

C. Skin -Redness of skin, small rash-like dots, itching, tissue destruction and death (gray appearance) may be seen within minutes, burning, blisters within hours, necrosis within days, moist areas affected most

D. Gastrointestinal Tract -Pain, nausea, vomiting, diarrhea

E. Other -Shock may occur after severe exposure, anxiety and depression

III. Emergency Decontamination

A. Remove and double-bag contaminated clothing and personal belongings and cut away the victim's mustard-contaminated hair.

B. Unless carried out within 1-2 minutes, decontamination does not prevent subsequent blistering. Decontamination still should be carried out to prevent secondary contamination.

C. Decontaminate immediately:

1. Mustards should not be decontaminated with water, except for the eyes, as it will spread the agent
   a) Eyes and mucous membranes – flush with water, saline, or isotonic sodium bicarbonate for 5 to 10 minutes
   b) Exposed skin and scalp – decontaminate by blotting, not wiping off the agent, so the contaminant will not be spread. Use military or commercially available decontamination kits
      (1) As an alternative, use 0.5% aqueous chlorine solution to thoroughly wash the skin and hair, but is less effective for HN3
      (2) Absorbent powders, such as flour, talcum powder or fullers earth may also be used
      (3) Wash off the decontamination solutions within 3-4 minutes with soap and water
   c) If the victim already has erythematous skin, decontaminating the skin with just soap and water is recommended

D. Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary
   1. **ALS** - Intubate the trachea if necessary.
   2. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated.

B. **EMT-I/ALS** - Provide IV therapy as necessary
   1. Unlike thermal burns, chemical burns do not require massive fluid replacement.
   2. Do not over-hydrate. Over-hydration of patients with significant skin burns may result in "third spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches

C. **ALS** – Pharmacology per MPD:
   1. Analgesics/narcotics per MPD
   2. Antihistamine per MPD for vomiting, itching, and edema resulting from exposure to impure and distilled sulfur mustard.
   3. Antibiotics per MPD for respiratory infections, affected skin areas and eyes

D. In case of ingestion, contact the Poison Center

E. Dress affected skin areas as necessary. Do not cover the eyes with bandages.

Lewisite (L)

- Lewisite vaporizes quickly enough to be a respiratory hazard, but can also be absorbed. Effects from both vapor and skin exposure occur immediately.
- Providers attending contaminated patients should have protective masks, butyl rubber gloves, and chemical protective over garments
- Caution: Lewisite may cause rubber to break down with prolonged exposure
- Characteristics: appears as a colorless liquid with a very slight odor when pure. If impure, the color may vary from purple or brown and have a geranium-like odor. MD and ED reportedly smell like rotting fruit.

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs and Symptoms

A. Eyes -Pain, redness, spasmodic twitching, sensitivity to light, tearing, and corneal damage

B. Respiratory Tract -Extreme immediate irritation, nosebleed, hoarseness and productive cough, sneezing, shortness of breath, pulmonary edema

C. Skin – Rash within 15-30 minutes followed by blisters, pain, redness, necrotic grayish skin

D. Gastrointestinal Tract -Diarrhea, nausea, vomiting, liver failure

E. Other -Shock may occur with severe exposures, anxiety and depression

III. Emergency Decontamination

A. Remove and double-bag contaminated clothing and personal belongings

B. Decontamination must occur immediately by blotting, not wiping off he agent, so the contaminant will not be spread

C. Lewisite should not be decontaminated with water, except for the eyes, as it will spread the agent.

1. Eyes and mucous membranes - flush with water, saline, or isotonic sodium bicarbonate for 5 to10 minutes.
2. Exposed skin and scalp – decontaminate using military or commercially available decontamination kits. If specialized kits are not available, rags, leaves, sticks, or just about any other material can be used to blot off liquid agent
   a) As an alternative, use 0.5% aqueous chlorine or hypochlorite solution to thoroughly wash the skin and hair, but is less effective for HN3
   b) Absorbent powders, such as flour, talcum powder or fullers earth may also be used
   c) Wash off the decontamination solutions within 3-4 minutes with soap and water
3. If the victim already has erythematous skin, decontaminating the skin with just soap and water is recommended
4. Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. ALS - Intubate the trachea if necessary.
2. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated.

B. **EMT-I/ALS** - Provide IV therapy as necessary

1. Care should be taken, over-hydration of patients with significant skin burns may result in "third spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches

C. **ALS** – Pharmacology:
   1. Analgesics/narcotics per MPD
   2. British anti-lewisite (BAL), in oil IM for systemic removal and in ointment form for the eyes and skin – Per MPD

D. Dress affected skin areas as necessary

E. Do not cover the eyes with bandages, if necessary, use dark or opaque goggles to relieve discomfort from light sensitivity

E. In case of ingestion, do not induce vomiting:
   1. Contact Poison Center.

Phosgene Oxime (CX)

Phosgene oxime vaporizes quickly enough to be a respiratory hazard.

- CX is not a true vesicant because it does not cause blisters; instead exposure results in corrosive lesions.
- Upon exposure, signs and symptoms occur immediately.
- The pain from CX contact with skin may persist for days.
- Characteristics: Odor - a peppery or pungent odor, odor of new mown hay

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs and Symptoms – Effects occur immediately

A. Eyes – Unbearable pain, redness, spasmodic twitching, tearing, corneal damage, lid edema, with possible blindness

B. Respiratory tract -Immediate irritation, sore throat, hoarseness, dyspnea, chest pain, cough, pulmonary edema, including rales and wheezes; and possible pulmonary thromboses with severe exposure

C. Skin - Unbearable pain, blanching, red ring in 30 seconds, itchy swelling in 30 minutes, necrosis may occur

D. Gastrointestinal - possible bleeding in the GI tract

E. Other – Anxiety and depression

III. Emergency Decontamination

A. Remove and double-bag contaminated clothing and personal belongings

B. Decontaminate immediately after exposure because the agent is absorbed from the skin within seconds:

1. Eyes and mucous membranes - flush with water, saline, or isotonic sodium bicarbonate for 5 to10 minutes
2. Skin:
   a) Vapor exposure only:
      (1) Decontaminate with soap and water or 0.5% solution of sodium hypochlorite
   b) Liquid exposure:
      (1) Showering with water alone with will be adequate to remove any agent that has not yet reacted with tissue
      (2) If the victim already has erythematous skin, washing the skin with just soap and water is recommended
   c) As an alternative form of decontamination:
   d) Use 0.5% sodium hypochlorite solution to thoroughly wash the skin and hair; a chlorinated solution is ineffective for phosgene oxime
   e) Absorbent powders, such as flour, talcum powder or fullers earth may also be used
3. Wash off the decontamination solutions within 3-4 minutes with soap and water
4. Use caution to avoid hypothermia when decontaminating

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. **ALS** - Intubate the trachea if necessary
2. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated.

B. **EMT-I/ALS** - Provide IV therapy as necessary

1. Care should be taken, over-hydration of patients with significant skin burns may result in "third-spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches

C. **ALS** – Pharmacology per MPD:
   1. Analgesics/narcotics ASAP per MPD
   2. Corticosteroids given I.V. may be particularly helpful for the treatment of phosgene

D. Do not cover the eyes with bandages

F. In case of ingestion, do not induce vomiting:
   1. Contact Poison Center.

INCENDIARY AGENTS/THERMAL BURNS

Individuals are severely burned when:

- A Combination of burns ≥ 20% or involve the face or airway (**State of Washington-Prehospital Trauma Triage (Destination) Procedures**).
- They meet the American Burn Association's **"Criteria For Transfer To A Burn Center"**:
    - Burn Injuries that should be referred to a burn unit include the following:
        - •Partial thickness burns greater than 10% total body surface area (TBSA)
        - •Third-degree burns in any age group
        - •Electrical burns, including lightning injury
        - •Chemical burns
        - •Inhalation injury
        - •Burn injury in a patient with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
        - •Any patient with burns and concomitant trauma
        - •Burns that involve the face, hands, feet, genitalia, perineum or major joints.

Magnesium/Thermite

- Identify source of burning and take appropriate safety precautions.
- Secure the scene, since live munitions may be in the area.
- Consider secondary and tertiary devices
- Incendiary agents primarily affect the skin (thermal) and the respiratory system (magnesium dust and fumes).

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs And Symptoms

A. Eyes – Agent may produce chemical injury to the eyes

B. Respiratory Tract – Irritation, nasal drainage, productive cough, Hypoxia and tachypnea, wheezes or crackles on lung examination, airway burns (e.g., edema, charring), lung burns with potential airway obstruction, possible chemical injuries

C. Skin - Deep partial or full-thickness thermal burns.

1. Thermite –Thermal burns with minimally reactive metal particles embedded in the tissue, possible chemical injuries.
2. Magnesium – Retained particles in skin may:
    a) React with tissue fluid to produce magnesium dihydroxide, which produces an alkali chemical burn.
    b) Produce skin lesions that mimic gas gangrene, with tissue death and intratissue gas bubbles due to hydrogen gas formed from the same reaction.

D. Evaluate depth and area by using Rule Of Nines Appendix (see page 31)

1. Burns >= 20% and/or involving face or airway, see Trauma Triage Procedure, page 33)

III. Emergency Decontamination

A. Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety.

1. Remove jewelry and non-adhered clothing as necessary
2. Thermite – Flush thermite burns with copious amounts of water and brush them to remove contaminating particles
3. Magnesium - Remove all unburned particles by mechanical means
   a) If particles are present, do not flush with water until particles have been removed.
   b) Use copious amounts of water to rapidly flush away residual magnesium before the resulting chemical reaction can cause harm.

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

B. Control bleeding

C. **EMT-I/ALS** - Provide IV therapy as necessary

D. **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits.

E. Pulse oximetry

F. Cover burns with dry sterile dressing. Avoid large areas of wet dressings due to the risk of hypothermia.

Napalm

- Identify source of burning and take appropriate safety precautions.
- Secure the scene, since live munitions may be in the area.
- Consider secondary and tertiary devices

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs And Symptoms

A. Patient may recall the sound of an explosion and complain of severe pain from burns

B. Eyes – Agent may produce chemical injuries to the eyes

C. Respiratory Tract –Airway burns (e.g., edema, charring) or lung burns, with potential airway obstruction, possible chemical injuries

D. Skin - Deep partial or full-thickness thermal burns from agent, dehydration as a result of radiant heat, possible chemical injuries

E. Altered level of consciousness due to carbon monoxide exposure as a result of the combustion process

F. Evaluate depth and area by using Rule Of Nines Appendix (see page 31)

1. Burns >= 20% and/or involving face or airway, see Trauma Triage Procedure, page 33)

III. Emergency Decontamination

A. Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety

1. Remove jewelry and non-adhered clothing as necessary
2. Take care when removing smoldering napalm from the skin
3. Cool tissues with saline or clean water.

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. Carbon monoxide exposure may be a concern; provide 100% oxygen via nonrebreather mask en route.

B. Control bleeding

C. **EMT-I/ALS** - Provide IV therapy as necessary

D. **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits.

E. Cover burns with dry sterile dressing. Avoid large areas of wet dressings due to the risk of hypothermia.

White Phosphorus

- Identify source of burning and take appropriate safety precautions.
- Secure the scene, since live munitions may be in the area.
- Consider secondary and tertiary devices

I. Scene Size-up

A. Utilize appropriate PPE

II. Focused Assessment

A. Signs And Symptoms
   1. Eyes – Agent may produce chemical injuries to the eyes
   2. Respiratory Tract –Airway burns (e.g., edema, charring) or lung burns, with potential airway obstruction, possible chemical injuries
   3. Skin - Deep partial or full-thickness thermal burns from agent, possible chemical injuries

B. Direct assessment toward traumatic and burn injuries
   1. Pay particular attention to areas where phosphorus may be embedded as a result of explosion

C. Evaluate depth and area by using Rule Of Nines Appendix (see page 31)
   1. Burns >= 20% and/or involving face or airway, (see Trauma Triage Procedure, page 33)

III. Emergency Decontamination

A. Remove jewelry and all clothing for the initial assessment - may re-ignite and cause additional injury

B. Exercise care when handling potentially contaminated clothing to prevent secondary exposure and burns.

C. Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety.
   1. Irrigate exposure sites with saline or place saline-soaked and/or water-soaked pads on areas of exposure.
   2. Remove all unburned particles of White Phosphorus by mechanical means

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

B. Control bleeding

C. **EMT-I/ALS** - Provide IV therapy as necessary

D. **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits.

E. Pulse oximetry

F. Cover burns with dry sterile dressing.
   1. Avoid large areas of wet dressings due to the risk of hypothermia.
   2. Do not use oily or greasy dressing, since the element is lipid soluble and can penetrate into the tissue

Thermal Burns

- Identify source of burning and take appropriate safety precautions.
- Secure the scene, since live munitions may be in the area.
- Consider secondary and tertiary devices

I. Scene Size-up

A. Utilize appropriate PPE

II. Signs And Symptoms

A. Eyes –tearing, sensitivity to light, or a foreign body sensation, corneal damage

B. Respiratory –oropharyngeal edema, changes in the voice, altered mental status

C. Skin –

1. Superficial burns involves only the epidermis – Example = sunburn
   a) Tissue blanches with pressure
   b) Tissue is erythematous and often painful
   c) Tissue damage is minimal
2. Partial thickness burns involves the epidermis and portions of dermis
   a) Burned area characteristically has blisters and is very painful
3. Full thickness burns are characterized by charring of skin or a translucent white color, with coagulated vessels visible below
   a) Burn site is painless, but patient will complain of pain from surrounding tissues
   b) Skin tissue and structures are destroyed

D. Evaluate depth and area by using Rule Of Nines Appendix (see page 31)

1. Burns >= 20% and/or involving face or airway, (see Trauma Triage Procedure, page 33)

III. Emergency Decontamination

A. Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety.

1. Remove jewelry and non-adhered clothing as necessary - clothes may re-ignite and cause additional injury
2. Cool tissues with saline or clean water

IV. Management

A. Clear the airway, provide oxygen and/or ventilatory assistance as necessary

1. Carbon monoxide exposure may be a concern; provide 100% oxygen via nonrebreather mask.

B. Control bleeding

C. **EMT-I/ALS** - Provide IV therapy as necessary

D. **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits.

E. Cover burns with dry sterile dressings or dry sterile sheets. Avoid large areas of wet dressings due to the risk of hypothermia.

APPENDICIES

SUMMARY OF THE EFFECTS OF HAZARDOUS AGENTS

Agent	Signs and Symptoms	Emergency Decontamination	Management
Tear Gas (CS, CA, and CR), Mace (CN), Pepper spray (OC)	**Eyes** - Intense irritation, pain, spasmodic twitching, tearing, sensitivity to light **Respiratory Tract** – Runny nose, pain, tightness in chest, difficulty breathing, choking, burning **Skin** -Stinging, occasional dermatitis, blistering may occur **Gastrointestinal tract** - Nausea, vomiting rarely occurs **Other** – Headache	Remove contaminated clothing and personal belongings Irrigation of the eyes may help with pain relief. Prevent contaminated irrigation solution from running onto unaffected tissues	Clear the airway, provide oxygen and/or ventilatory assistance as necessary **ALS** – analgesic nose/eye drops per MPD
Chlorine (Cl)	**Eyes** – tearing, irritation **Respiratory tract** - nose and throat irritation, sneezing, dyspnea, violent cough, chest pain, decreased breath sounds, wheezing, stridor, loss of voice, runny nose, laryngeal or pulmonary edema, ulceration of the respiratory tract **Skin** -Redness, and chemical burns to the skin, cyanosis, dermatitis **Central nervous system** –General excitement or restlessness, lightheadedness, headache **Gastrointestinal tract** -Nausea, vomiting, abdominal pain **Cardiovascular system** -Rapid heart rate, increased rate of respiration **Other** -Excessive salivation, muscle weakness, rales	Remove and double-bag contaminated clothing and personal belongings Handle frostbitten skin and eyes with caution. Warm affected parts Let the circulation reestablish itself naturally. Flush exposed skin and hair with plain water for 3 to 5 minutes Wash twice with mild soap Rinse thoroughly with water Prevent contaminated irrigation solution from running onto unaffected skin. Irrigation of the eyes may help with pain relief. Use caution to avoid hypothermia when decontaminating	Clear the airway, provide oxygen and/or ventilatory assistance as necessary Move patient to fresh air environment **ALS** - Intubate the trachea if necessary For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated **ALS** – analgesic nose/eye drops per MPD

Agent	Signs and Symptoms	Emergency Decontamination	Management
Ammonia **NH_3**	**Eyes** - Irritation, corneal scarring, potential blindness **Respiratory tract** - nose, and throat irritation; coughing; bronchospasm, laryngospasm and laryngeal edema, pulmonary edema **Skin** - Stinging pain, inflammation of skin, blisters, necrosis, especially moist areas **Gastrointestinal tract** - burning, abdominal pain, difficulty swallowing, drooling, nausea, vomiting **Central nervous system** - Altered mental status	Removal of the victim from the environment and decontaminate If exposed patient has no skin or eye irritation, decontamination is usually not necessary If exposure is significant, rapid skin decontamination is critical Remove and double-bag contaminated clothing and personal belongings while flushing exposed areas Patient may assist with clothing removal and basic decontamination if able Flush liquid-exposed skin and hair with plain water for at least 5 minutes If possible, wash exposed skin extremely thoroughly with soap and water Flush exposed or irritated eyes with plain water or saline for 3 to 5 minutes Remove contact lenses if present Use caution to avoid hypothermia when decontaminating	Clear the airway, provide oxygen and/or ventilatory assistance as necessary ALS - Intubate the trachea if necessary For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated. Pharmacology: Bronchodilator per MPD **ALS** – analgesics/narcotics per MPD **EMT-I/ALS** - Provide IV therapy as necessary In case of ingestion, do not induce vomiting: Contact Poison Center.
Chloropicrin	**Eyes** - irritation, pain, redness, and tearing. Prolonged eye exposure to chloropicrin can cause blindness. **Respiratory tract -** Irritation, coughing, labored breathing, sore throat, dizziness, bluish skin, vomiting, and in some instances, chemical pneumonitis and pulmonary edema. **Skin -** Chemical burns or dermatitis manifested by red, cracked, irritated skin. The extent of skin injury depends on the concentration and duration of exposure **Gastrointestinal tract -** burns to the mouth,	During decontamination, it is important to avoid cross-contamination Remove and double-bag contaminated clothing and personal belongings Clean and scrub the patient's entire skin surface with soap and water Use caution to avoid hypothermia when decontaminating	Clear the airway, provide oxygen and/or ventilatory assistance as necessary; **DO NOT** use mouth-to-mouth. Intubate the trachea if necessary. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated. Provide supportive measures addressing cardiovascular status as necessary. If the patient complains of eye pain or

Agent	Signs and Symptoms	Emergency Decontamination	Management
	throat, and esophagus. Ingestion of large quantities of chloropicrin liquid can be fatal. **Injection**: Redness and irritation of surrounding tissues.		tearing, irrigate the eyes with copious amounts of water. **EMT-I/ALS** - Provide IV therapy as necessary **ALS** – bronchodilator, analgesics/narcotics per MPD No specific antidote exists for this toxin. General supportive measures are indicated.
Impure Sulfur Mustard (H) Distilled Sulfur Mustard (HD), and Nitrogen Mustard (HN-1, HN-2, HN-3)	**Eyes** -Irritation, redness, edema of lids, tearing, sensitivity to light, spasmodic twitching, pain, corneal ulceration, possible scarring **Respiratory tract** - Irritation, cough, hoarseness, sinus and pharynx burning, nosebleed, dyspnea, rales, pulmonary edema, fever, and pneumonia in severe cases **Skin** -Redness of skin, small rash-like dots, itching, tissue destruction and death (gray appearance) may be seen within minutes, burning, blisters within hours, necrosis within days, moist areas affected most **Gastrointestinal Tract** -Pain, nausea, vomiting, diarrhea **Other** -Shock may occur after severe exposure, anxiety and depression	Remove and double-bag contaminated clothing and personal belongings and cut away the victim's mustard-contaminated hair. Unless carried out within 1-2 minutes, decontamination does not prevent subsequent blistering. Decontamination still should be carried out to prevent secondary contamination. Decontaminate immediately: Mustards should not be decontaminated with water, except for the eyes, as it will spread the agent Eyes and mucous membranes – flush with water, saline, or isotonic sodium bicarbonate for 5 to 10 minutes Exposed skin and scalp – decontaminate by blotting, not wiping off the agent, so the contaminant will not be spread. Use military or commercially available decontamination kits As an alternative, use 0.5% aqueous chlorine solution to thoroughly wash the skin and hair, but is less effective for HN3 Absorbent powders, such as flour, talcum powder or fullers earth may	Clear the airway, provide oxygen and/or ventilatory assistance as necessary **ALS** - Intubate the trachea if necessary. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated. **EMT-I/ALS** - Provide IV therapy as necessary Unlike thermal burns, chemical burns do not require massive fluid replacement. Do not over-hydrate. Over-hydration of patients with significant skin burns may result in "third spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches **ALS** – Pharmacology per MPD: Analgesics/narcotics per MPD Antihistamine per MPD for vomiting, itching, and edema resulting from exposure to impure and distilled sulfur mustard. Antibiotics per MPD for respiratory infections, affected

Agent	Signs and Symptoms	Emergency Decontamination	Management
		also be used Wash off the decontamination solutions within 3-4 minutes with soap and water If the victim already has erythematous skin, decontaminating the skin with just soap and water is recommended Use caution to avoid hypothermia when decontaminating	skin areas and eyes In case of ingestion, contact the Poison Center Dress affected skin areas as necessary. Do not cover the eyes with bandages.
Lewisite (L)	**Eyes** -Pain, redness, spasmodic twitching, sensitivity to light, tearing, and corneal damage **Respiratory Tract** -Extreme immediate irritation, nosebleed, hoarseness and productive cough, sneezing, shortness of breath, pulmonary edema **Skin** – Rash within 15-30 minutes followed by blisters, pain, redness, necrotic grayish skin **Gastrointestinal Tract** -Diarrhea, nausea, vomiting, liver failure **Other** -Shock may occur with severe exposures, anxiety and depression	Remove and double-bag contaminated clothing and personal belongings Decontamination must occur immediately by blotting, not wiping off he agent, so the contaminant will not be spread Lewisite should not be decontaminated with water, except for the eyes, as it will spread the agent. Eyes and mucous membranes - flush with water, saline, or isotonic sodium bicarbonate for 5 to10 minutes. Exposed skin and scalp – decontaminate using military or commercially available decontamination kits. If specialized kits are not available, rags, leaves, sticks, or just about any other material can be used to blot off liquid agent As an alternative, use 0.5% aqueous chlorine or hypochlorite solution to thoroughly wash the skin and hair, but is less effective for HN3 Absorbent powders, such as flour, talcum powder or fullers earth may also be used Wash off the decontamination solutions within 3-4 minutes with soap and water If the victim already has erythematous skin, decontaminating the skin with just	Clear the airway, provide oxygen and/or ventilatory assistance as necessary ALS - Intubate the trachea if necessary. For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated. **EMT-I/ALS** - Provide IV therapy as necessary Care should be taken, over-hydration of patients with significant skin burns may result in "third spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches **ALS** – Pharmacology: Analgesics/narcotics per MPD British anti-lewisite (BAL), in oil IM for systemic removal and in ointment form for the eyes and skin – Per MPD Dress affected skin areas as necessary. Do not cover the eyes with bandages, if necessary, use dark or opaque goggles to relieve discomfort from light sensitivity

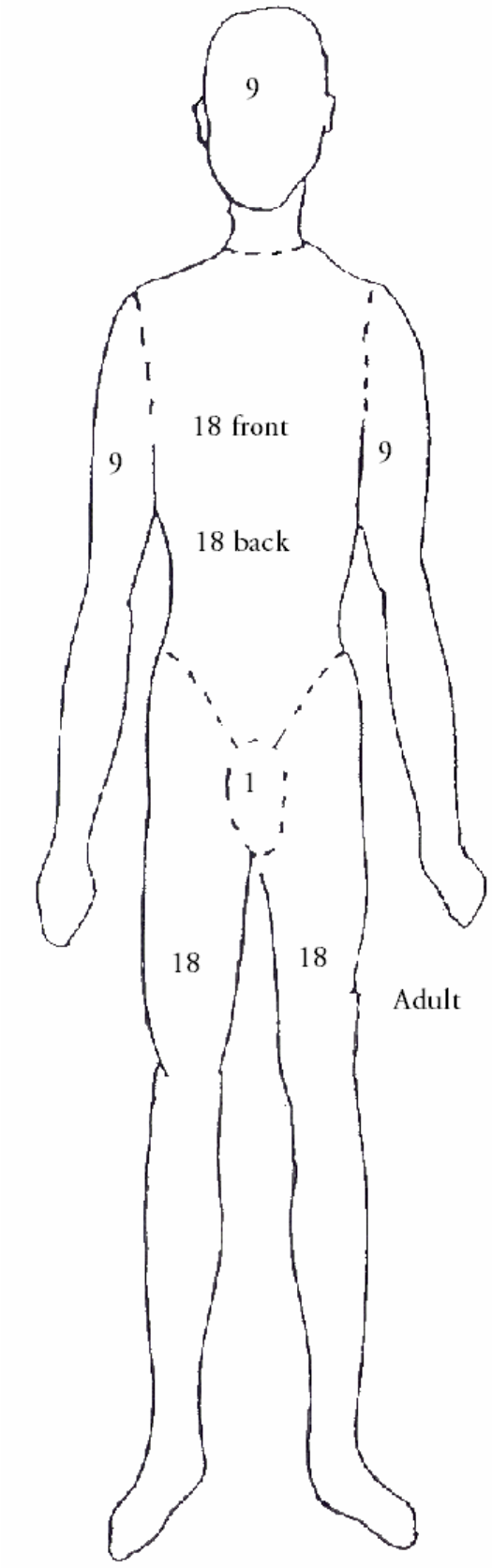
Agent	Signs and Symptoms	Emergency Decontamination	Management
		soap and water is recommended Use caution to avoid hypothermia when decontaminating	In case of ingestion, do not induce vomiting: Contact Poison Center.
Phosgene Oxime (CX)	**Eyes** – Unbearable pain, redness, spasmodic twitching, tearing, corneal damage, lid edema, with possible blindness **Respiratory tract** -Immediate irritation, sore throat, hoarseness, dyspnea, chest pain, cough, pulmonary edema, including rales and wheezes; and possible pulmonary thromboses with severe exposure **Skin** - Unbearable pain, blanching, red ring in 30 seconds, itchy swelling in 30 minutes, necrosis may occur **Gastrointestinal** - possible bleeding in the GI tract **Other** – Anxiety and depression	Remove and double-bag contaminated clothing and personal belongings Decontaminate immediately after exposure because the agent is absorbed from the skin within seconds: Eyes and mucous membranes - flush with water, saline, or isotonic sodium bicarbonate for 5 to10 minutes Skin: Vapor exposure only: Decontaminate with soap and water or 0.5% solution of sodium hypochlorite Liquid exposure: Showering with water alone with will be adequate to remove any agent that has not yet reacted with tissue If the victim already has erythematous skin, washing the skin with just soap and water is recommended As an alternative form of decontamination: Use 0.5% sodium hypochlorite solution to thoroughly wash the skin and hair; A chlorinated solution is ineffective for phosgene oxime Absorbent powders, such as flour, talcum powder or fullers earth may also be used Wash off the decontamination solutions within 3-4 minutes with soap and water Use caution to avoid hypothermia when decontaminating	Clear the airway, provide oxygen and/or ventilatory assistance as necessary **ALS** - Intubate the trachea if necessary For lower airway injury resulting in pulmonary edema positive pressure ventilations using positive end expiratory pressure (PEEP) may be indicated. **EMT-I/ALS** - Provide IV therapy as necessary Care should be taken, over-hydration of patients with significant skin burns may result in "third spacing" of fluids within damaged lungs and worsen ventilation/perfusion mismatches **ALS** – Pharmacology per MPD: Analgesics/narcotics ASAP per MPD Corticosteroids given I.V. may be particularly helpful for the treatment of phosgene Do not cover the eyes with bandages In case of ingestion, do not induce vomiting: Contact Poison Center.

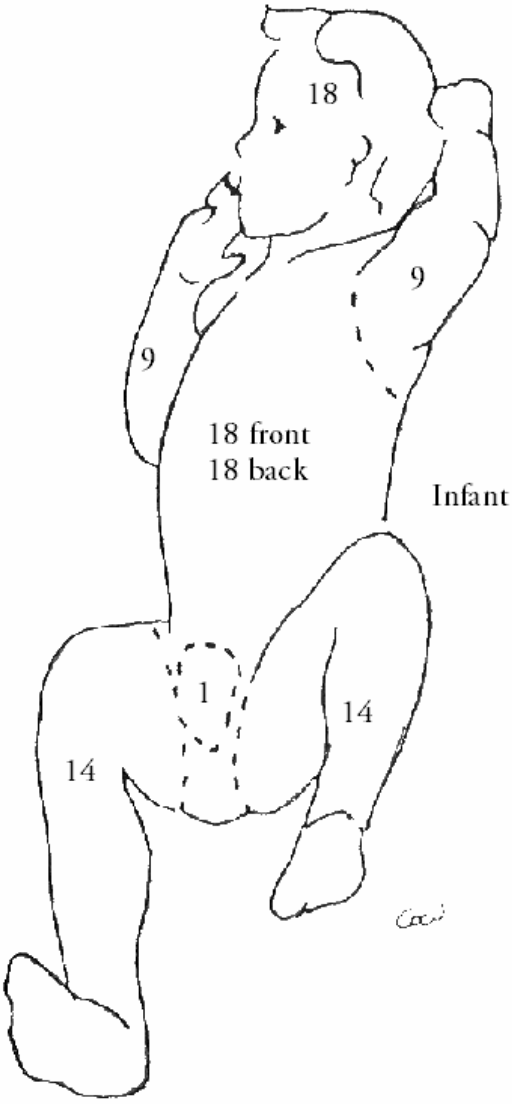
Agent	Signs and Symptoms	Emergency Decontamination	Management
Magnesium/Thermite	**Eyes** – Agent may produce chemical injury to the eyes **Respiratory Tract** – Irritation, nasal drainage, productive cough, Hypoxia and tachypnea, wheezes or crackles on lung examination, airway burns (e.g., edema, charring), lung burns with potential airway obstruction, possible chemical injuries **Skin** - Deep partial or full-thickness thermal burns. Thermite –Thermal burns with minimally reactive metal particles embedded in the tissue, possible chemical injuries. Magnesium – Retained particles in skin may: React with tissue fluid to produce magnesium dihydroxide, which produces an alkali chemical burn. Produce skin lesions that mimic gas gangrene, with tissue death and intratissue gas bubbles due to hydrogen gas formed from the same reaction. Evaluate depth and area by using Rule Of Nines Appendix (see page 31) Burns >= 20% and/or involving face or airway, see Trauma Triage Procedure, page 33)	Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety. Remove jewelry and non-adhered clothing as necessary Thermite – Flush thermite burns with copious amounts of water and brush them to remove contaminating particles Magnesium - Remove all unburned particles by mechanical means If particles are present, do not flush with water until particles have been removed. Use copious amounts of water to rapidly flush away residual magnesium before the resulting chemical reaction can cause harm.	Clear the airway, provide oxygen and/or ventilatory assistance as necessary Control bleeding **EMT-I/ALS** - Provide IV therapy as necessary **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits. Pulse oximetry Cover burns with dry sterile dressing. Avoid large areas of wet dressings due to the risk of hypothermia.
Napalm	Patient may recall the sound of an explosion and complain of severe pain from burns **Eyes** – Agent may produce chemical injuries to the eyes **Respiratory Tract** –Airway burns (e.g., edema, charring) or lung burns, with potential	Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety Remove jewelry and non-adhered clothing as necessary Take care when removing smoldering napalm	Clear the airway, provide oxygen and/or ventilatory assistance as necessary Carbon monoxide exposure may be a concern; provide 100% oxygen via nonrebreather mask en route.

Agent	Signs and Symptoms	Emergency Decontamination	Management
	airway obstruction, possible chemical injuries **Skin** - Deep partial or full-thickness thermal burns from agent, dehydration as a result of radiant heat, possible chemical injuries Altered level of consciousness due to carbon monoxide exposure as a result of the combustion process Evaluate depth and area by using Rule Of Nines Appendix (see page 31) Burns >= 20% and/or involving face or airway, see Trauma Triage Procedure, page 33)	from the skin Cool tissues with saline or clean water.	Control bleeding **EMT-I/ALS** - Provide IV therapy as necessary **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits. Cover burns with dry sterile dressing. Avoid large areas of wet dressings due to the risk of hypothermia.
White Phosphorus	**Eyes** – Agent may produce chemical injuries to the eyes **Respiratory Tract** –Airway burns (e.g., edema, charring) or lung burns, with potential airway obstruction, possible chemical injuries **Skin** - Deep partial or full-thickness thermal burns from agent, possible chemical injuries Direct assessment toward traumatic and burn injuries Pay particular attention to areas where phosphorus may be embedded as a result of explosion Evaluate depth and area by using Rule Of Nines Appendix (see page 31) Burns >= 20% and/or involving face or airway, (see Trauma Triage Procedure, page 33)	Remove jewelry and all clothing for the initial assessment - may re-ignite and cause additional injury Exercise care when handling potentially contaminated clothing to prevent secondary exposure and burns. Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety. Irrigate exposure sites with saline or place saline-soaked and/or water-soaked pads on areas of exposure. Remove all unburned particles of White Phosphorus by mechanical means	Clear the airway, provide oxygen and/or ventilatory assistance as necessary Control bleeding **EMT-I/ALS** - Provide IV therapy as necessary **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits. Pulse oximetry Cover burns with dry sterile dressing. Avoid large areas of wet dressings due to the risk of hypothermia. Do not use oily or greasy dressing, since the element is lipid soluble and can penetrate into the tissue

Agent	Signs and Symptoms	Emergency Decontamination	Management
Thermal Burns	**Eyes** –tearing, sensitivity to light, or a foreign body sensation, corneal damage Respiratory –oropharyngeal edema, changes in the voice, altered mental status **Skin** – Superficial burns involves only the epidermis – Example = sunburn Tissue blanches with pressure Tissue is erythematous and often painful Tissue damage is minimal Partial thickness burns involves the epidermis and portions of dermis Burned area characteristically has blisters and is very painful Full thickness burns are characterized by charring of skin or a translucent white color, with coagulated vessels visible below Burn site is painless, but patient will complain of pain from surrounding tissues Skin tissue and structures are destroyed Evaluate depth and area by using Rule Of Nines Appendix (see page 31) Burns >= 20% and/or involving face or airway, (see Trauma Triage Procedure, page 33)	Stop the burning process and remove patients from the burning environment, with appropriate attention to personal safety. Remove jewelry and non-adhered clothing as necessary - clothes may re-ignite and cause additional injury Cool tissues with saline or clean water	Clear the airway, provide oxygen and/or ventilatory assistance as necessary Carbon monoxide exposure may be a concern; provide 100% oxygen via nonrebreather mask en route. Control bleeding **EMT-I/ALS** - Provide IV therapy as necessary **ALS** - Narcotic analgesia per MPD may be useful if the patient's hemodynamic status permits. Cover burns with dry sterile dressings or dry sterile sheets. Avoid large areas of wet dressings due to the risk of hypothermia.

RULE OF NINES - ESTIMATING BURNS





START TRIAGE

Simple Triage And Rapid Treatment

I. RPM method of identifying immediate patients; Respiration's, Perfusion, Mental status
II. Triage Criteria
    A. Immediate (Red)
        1. Respiration's >30 per minute or absent until head repositioned, or
        2. Radial pulse absent or capillary refill > 2 seconds, or
        3. Cannot follow simple commands
    B. Delayed (Yellow)
        1. Respiration's present and < 30 per minute, and
        2. Radial pulse present, and can follow simple commands
    C. Minor (Green)
        1. Anyone that can get up and walk when you instruct them to do so.
    D. Deceased (Black)
        1. Anyone not breathing after you open the airway
III. This system is limited to use in the incident where needs exceed resources immediately available
IV. Frequently reassess patients and perform a more in-depth triage as more rescuers become available

STATE OF WASHINGTON
PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURE

Purpose

The purpose of the Triage Procedure is to ensure that major trauma patients are transported to the most appropriate hospital facility. This procedure has been developed by the Prehospital Technical Advisory Committee (TAC), endorsed by the Governor's EMS and Trauma Care Steering Committee, and in accordance with RCW 70.168 and WAC 246-976 adopted by the Department of Health (DOH).

The procedure is described in the schematic with narrative. Its purpose is to provide the prehospital provider with quick identification of a major trauma victim. If the patient is a major trauma patient, that patient or patients must be taken to the highest level trauma facility within 30 minutes transport time, by either ground or air. To determine whether an injury is major trauma, the prehospital provider shall conduct the patient assessment process according to the trauma triage procedures.

Explanation of Process

A. **Any certified EMS and Trauma person can identify a major trauma patient and activate the trauma system.** This may include requesting more advanced prehospital services or aero-medical evacuation.

B. **The first step (1) is to assess the vital signs and level of consciousness.** The words "Altered mental status" mean anyone with an altered neurologic exam ranging from completely unconscious, to someone who responds to painful stimuli only, or a verbal response which is confused, or an abnormal motor response.

C. The "and/or" conditions in Step 1 mean that any one of the entities listed in Step 1 can activate the trauma system.

D. Also, the asterisk (*) means that if the airway is in jeopardy and the on-scene person cannot effectively manage the airway, the patient should be taken to the nearest medical facility or consider meeting up with an ALS unit. These factors are true regardless of the assessment of other vital signs and level of consciousness.

E. **The second step (2) is to assess the anatomy of injury.** The specific injuries noted require activation of the trauma system. Even in the assessment of normal vital signs or normal levels of consciousness, the presence of any of the specific anatomical injuries does require activation of the trauma system.

F. Please note that steps 1 and 2 also require notifying Medical Control.

G. **The third step (3) for the prehospital provider is to assess the biomechanics of the injury and address other risk factors.** The conditions identified are reasons for the provider to contact and **consult with Medical Control** regarding the need to activate the system. They do not automatically require system activation by the prehospital provider.

H. Other risk factors, coupled with a "gut feeling" of severe injury, means that Medical Control should be consulted and consideration given to transporting the patient to the nearest trauma facility.

I. Please note that certain burn patients (in addition to those listed in Step 2) should be considered for immediate transport or referral to a burn center/unit.

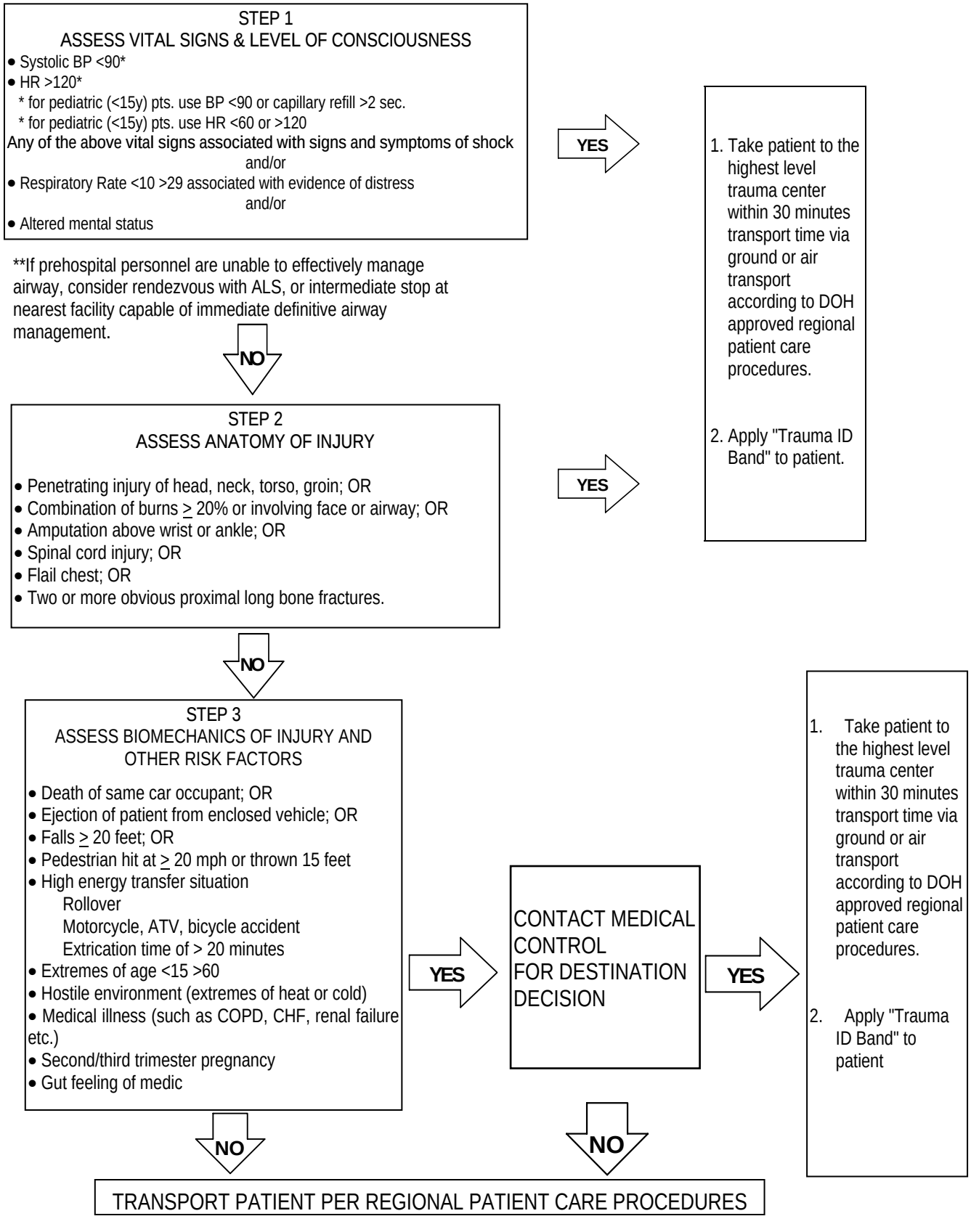
Patient Care Procedures

To the right of the attached schematic you will find the words "according to DOH approved regional patient care procedures." These procedures are developed by the regional EMS and Trauma council in conjunction with local councils. They are intended to further define how the system is to operate. They identify the level of medical care personnel who participate in the system, their roles in the system, and participation of hospital facilities in the system. They also address the issue of inter-hospital transfer, by transfer agreements for identification, and transfer of critical care patients.

In summary, the Prehospital Trauma Triage Procedure and the Regional Patient Care Procedures are intended to work in a "hand in glove" fashion to effectively address EMS and Trauma patient care needs. By functioning in this manner, these two instruments can effectively reduce morbidity and mortality.
If you have any questions on the use of either instrument, you should bring them to the attention of your local or regional EMS and Trauma council or contact 1-800-458-5281.

STATE OF WASHINGTON
PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURES

- Prehospital triage is based on the following 3 steps: Steps 1 and 2 require prehospital EMS personnel to notify medical control and activate the Trauma System. Activation of the Trauma System in Step 3 is determined by medical control**



GLOSSARY

ALS	Advanced Life Support
AMBULATE	To walk about
ANALGESTIC	A drug that relieves pain.
ANTIDOTE	A remedy that counteracts the effect of poison
APHASIA	A defect in speaking or comprehending in the normal fashion, caused by injury or disease in the brain centers regulating speech
APNEA	Absence of breathing
ASPHYXIA	Suffocation
BILATERAL	Pertaining to both sides.
BIOLOGICAL AGENTS	The FBI WMD Incident Contingency Plan defines biological agents as microorganisms or toxins from living organisms that have infectious or noninfectious properties that produce lethal or serious effects in plants and animals
BLS	Basic Life Support
BRADYCARDIA	An abnormal condition in which the heart contracts steadily but at a rate of less than 60 beats per minute
BRADYPNEA	An abnormally slow rate of breathing
BRONCHODILATOR	A drug that relaxes bronchial muscle resulting in expansion of the bronchial air passages
BRONCHOSPASM	Constriction of the air passages of the lung (as in asthma) by spasmodic contraction of the bronchial muscles
BURN	An injury caused by extremes of temperature, electric current, or certain chemicals: • Superficial - A burn affecting only the outer skin layers • Partial Thickness - A partial thickness burn penetrating beneath the superficial skin layers, producing edema and blistering • Full Thickness - A full thickness burn, involving all layers of the skin and underlying tissues as well, having a charred or white, leathery appearance

BUTYL GLOVES	Gloves impermeable to a wide range of chemicals due to a tight molecular structure including: nerve and mustard agents, acids, alkalis, MEK, MIBK, acetone, & other chemicals. Butyl rubber has excellent resistance to Aldehydes, Ketones, Esters, Alcohols, most inorganic acids, most caustics, Dioxene. Agent resistance (maximum recommended usage time) for: Mustard Gas (HD) - 75 minutes, Nerve Gas (GB) - 360 min.
CAROTID	One of the main arteries of the neck supplying blood to the head
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosive
CENTRAL NERVOUS SYSTEM (CNS)	The brain and spinal cord.
CHEMICAL AGENTS	The Federal Bureau of Investigation (FBI) Weapons of Mass Destruction (WMD) Incident Contingency Plan defines chemical agents as solids, liquids, or gases that have chemical properties that produce lethal or serious effects in plants and animals.
CHEMICAL PNEUMONITIS	Inflammation of the lungs resulting from inhalation of chemicals
COMA	A state of unconsciousness from which the patient cannot be aroused, even by powerful stimulation.
COMA POSITION	A body position, which allows the unconscious patient (non-traumatic) to breathe without obstruction from oral bleeding or drainage.
CONTRAINDICATION	Any condition which renders a particular line of treatment improper or undesirable.
COPIOUS AMOUNT	A large quantity, i.e., a water or solution wash using copious amounts of water (preferably under a shower) should be more than a liter or two of solution. If too little water is used on a burn agent, the contaminant could spread
CORNEAL	The transparent part of the coat of the eyeball that covers the iris and pupil and admits light to the interior
CORTICOSTEROIDS	Corticosteroids are potent anti-inflammatory compounds used to treat numerous inflammatory conditions and severe allergic reactions
CYANOSIS	Bluish color to the skin, associated with hypoxia.

DECEREBRATE POSTURE	A posture assumed by patients with severe brain dysfunction characterized by extension and rotation of the arms and extension of the legs.
DECONTAMINATION	Emergency – decontamination necessary to provide patient care Technical – More complete decontamination
DECORTICATE POSTURE	A posture assumed by patients with severe brain dysfunction characterized by extension of the legs and flexion of the arms.
DENSE	Marked by compactness or crowding together of parts; having a high mass per unit volume
DERMATITIS	Inflammation of skin evidenced by itching, redness, and various skin lesions.
DIAPHORESIS	Profuse perspiration
DISSIPATE	To cause to spread thin or scatter and gradually vanish
DOT	Department Of Transportation.
DYSPNEA	Difficulty in breathing, with resultant rapid, shallow respirations.
EDEMA	The condition in which excess fluid accumulates in body tissue, manifested by swelling.
EMBOLISM	A mass (embolus, singular; emboli, plural) of solid, liquid or gaseous material that is carried in the circulation and may lead to occlusion of blood vessels, with resultant infarction and necrosis of tissue supplied by those vessels.
EPITHELIUM	Layer of cells closely bound to one another to form continuous sheets covering surfaces that may come into contact with foreign substances
FEBRILE	Characterized by fever
GANGRENE	Local death of soft tissues due to loss of blood supply
GAS GANGRENE	Progressive gangrene marked by impregnation of the dead and dying tissue with gas and caused by one or more toxin-producing bacteria of the genus *Clostridium* that enter the body through wounds and proliferate in necrotic tissue
GASTROINTESTINAL TRACT	Pertaining to stomach and intestine.

HEMODYNAMIC	Relating to or functioning in the mechanics of blood circulation
HYPO-PERFUSION	Decreased perfusion to the body's tissue, also called shock
HYPOVENTILATION	A reduced rate or depth of breathing, often resulting in an abnormal rise of carbon dioxide
HYPOXIA	Reduction of oxygen in body tissues below normal levels.
INCIDENT COMMANDER	The person responsible for the overall management of the incident, approval of action plans, and providing direction and control for the command and staff sections of the incident command structure. In a Unified Command structure, the IC collaborates and consults with the chiefs and experts from the other disciplines involved in the response.
INCENDIARY	Relating to, or being a weapon (as a bomb) designed to start fires
KILOGRAM	A measure of weight equaling 2.2 pounds.
LARYNGEAL	Of, relating to, affecting, or used on the larynx
LARYNGEAL EDEMA	Edema of the larynx
LARYNGOSPASM	Spasm of laryngeal muscles
LAVAGE	To wash out, or irrigate.
LATENT	Present and capable of becoming though not now visible, obvious, or active (a *latent* infection)
LETHARGY	A condition of drowsiness or indifference.
LIPID	Substances that are soluble in nonpolar organic solvents (as chloroform and ether), that with proteins and carbohydrates constitute the principal structural components of living cells
METHAMPHETAMINE	A drug used medically in the form of its crystalline hydrochloride especially in the treatment of obesity and often used illicitly
MOI	Mechanism Of Injury
MUCOUS MEMBRANE	A membrane rich in mucous glands lining bodily cavities and canals that lead to the outside, chiefly the respiratory, digestive, and urogenital tracts. Mucous membranes line many tracts and structures of the

	body, including the mouth, nose, eyelids, windpipe and lungs, stomach and intestines, and the ureters, urethra, and urinary bladder. Also called mucosa
NECROSIS	The death of tissue, usually caused by a cessation of its blood supply.
NOI	Nature Of Illness
NUCLEAR WEAPONS	The Effects of Nuclear Weapons (DOE, 1977) defines nuclear weapons as weapons that release nuclear energy in an explosive manner as the result of nuclear chain reactions involving fission and/or fusion of atomic nuclei.
ORGANIC ARSENICALS	An organic compound or preparation containing arsenic
OROPHARYNGEAL	Of or relating to the mouth and pharynx
OVER-HYDRATION	A condition in which the body contains an excessive amount of fluids
PATIENT CARE PROCEDURES (PCPS)	Written operating guidelines adopted by the regional EMS/TC council per WAC 246-976-010.
PEEP	Positive end-expiratory pressure
PHARYNX	The part of the alimentary canal situated between the cavity of the mouth and the esophagus
POSTICTAL	Referring to the period after the convulsive state of a seizure.
PULMONARY EDEMA	Abnormal accumulation of fluid in the lungs
RADIOLOGICAL DISPERSAL DEVICES (RDD)	A conventional explosive device incorporating radioactive material(s) sometimes referred to as a “dirty bomb.”
R.A.I.N.	**R**ecognize, **A**void, **I**solate, **N**otify
RALES	An abnormal breath sound heard in the chest with a stethoscope. Fine rales have a crackling sound caused by air entering the lower air sacs (alveoli) of the lungs that have a buildup of fluids.
RCW	Revised Code of Washington
SALIVATION	To have a flow of saliva especially in excess
SOB	Shortness Of Breath

SPASMODIC	Of, relating to, characterized by, or resulting from spasm
STRIDOR	Harsh sound during respiration; high pitched and resembling the blowing of wind due to obstruction of air passages.
SUBCUTANEOUS EMPHYSEMA	The presence of a gas and especially air in the subcutaneous tissue, causing a crackling sensation on palpation of the skin
TACHYCARDIA	A rapid heart rate, over 100 per minute.
TACHYPNEA	An abnormally rapid rate of breathing
TERTIARY	Occurring in or being a third stage: as being a third device
THIRD-SPACING	A condition where extracellular water migrates into the interstitial spaces
THROMBOSIS	The formation or presence of a blood clot within a blood vessel during life
TINNITUS	Tinkling or ringing heard in one or both ears. It may be a sign of hearing injury.
TOXIN	A poison manufactured by bacteria or other forms of animal or vegetable life.
TRIAGE	A system used for categorizing and sorting patients according to the severity of their problems.
ULCERATION	Suppuration taking place on a free surface, as on the skin or on a mucous membrane, to form an ulcer
VAPORIZE	To convert from a liquid or solid into vapor
VESICANT	An agent (as a drug or a war gas) that induces blistering - called also *blister gas*
WAC	Washington Administrative Code
WEAPONS OF MASS DESTRUCTION - (18 U.S.C., SECTION 2332A)	(A) Any destructive device as defined in section 921 of this title (which reads) any explosive, incendiary or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, missile having an explosive or incendiary charge of more than one quarter ounce, mine or device similar to the above (B) Poison gas, (C) Any weapon involving disease organism

	(D) Any weapon that is designed to release radiation or radioactivity at a level dangerous to human life
WHEEZING	Production of whistling sounds during difficult breathing such as occurs in asthma, croup, and other respiratory disorders.

Resources:

eMedicine.com, Inc.

Burns, Chemical http://www.emedicine.com/EMERG/topic73.htm
CBRNE - Irritants: Cs, Cn, Cnc, Ca, Cr, Cnb, PS http://www.emedicine.com/emerg/topic914.htm

Blister Agent: Sulfur Mustard (H, HD, HS) http://www.cbwinfo.com/Chemical/Blister/HD.shtml

Toxicity, Mustard Agent http://www.emedicine.com/med/topic1529.htm

CBRNE - Vesicants, Mustard: Hd, Hn1-3, H http://www.emedicine.com/emerg/topic901.htm

CBRNE - Vesicants, Organic Arsenicals: L, ED, MD, PD, HL
http://www.emedicine.com/emerg/topic902.htm

CBRNE - Urticants, Phosgene Oxime http://www.emedicine.com/emerg/topic903.htm

CBRNE - Lung-Damaging Agents, Chloropicrin http://www.emedicine.com/emerg/topic907.htm

CBRNE - Incendiary Agents, Magnesium and Thermite http://www.emedicine.com/emerg/topic917.htm

CBRNE - Incendiary Agents, White Phosphorus http://www.emedicine.com/emerg/topic918.htm

CBRNE - Incendiary Agents, Napalm http://www.emedicine.com/emerg/topic919.htm

CBRNE - T-2 Mycotoxins http://www.emedicine.com/emerg/topic890.htm

Department of Health and Human Services (HHS), Centers for Disease Control and Prevention (CDC)

Medical Management Guidelines for Acute Chemical Exposures –
http://aepo-xdv-www.epo.cdc.gov/wonder/prevguid/p0000016/p0000016.asp

http://aepo-xdv-www.epo.cdc.gov/wonder/prevguid/p0000016/p0000016.asp#head005000000000000

Agency for Toxic Substances and Disease Registry -

Managing Hazardous Material Incidents http://www.atsdr.cdc.gov/mhmi.html

International Programme on Chemical Safety -

http://www.intox.org/pagesource/treatment/english/guides_list_english.htm